

Adhesive secured seat cover and method.

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Abstract

A temporary protective seat cover (10) having a tab (22) attached by means of a pressure sensitive adhesive (24). The seat cover is manufactured from a continuous strip of tubular blow molded plastic, cut and sealed to create upper and lower pockets for enclosing the seat back (14) and bottom (16) respectively. The closure tab (22) is a flap cut from the seat cover and has an adhesive strip applied to it. During installation, the closure tab (22) is pulled around the lower portion of the seat back (14) and bonded to the rear portion of the seat cover (10) covering the seat back (14). This pulls the seat cover taut over the seat bottom (16) in the area of the base of the seat back to prevent slippage and tearing during use. Five embodiments are disclosed.

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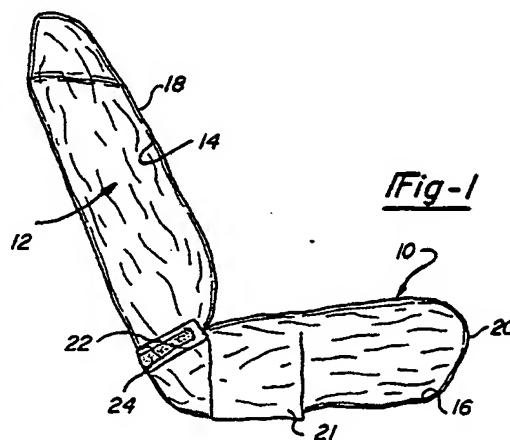
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(54) **Adhesive secured seat cover and method.**

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BACKGROUND OF THE INVENTION

This invention relates to seat covers and, more particularly, to temporary disposable seat covers that are secured with an adhesive.

Temporary seat covers are frequently used to protect seats during their manufacturing, shipment or repair. Such seat covers are particularly important in settings such as automobile manufacturing where a seat may be exposed to numerous contaminants from the time the seat is manufactured until it is delivered to a customer. For instance, the manufacturing environment could expose a seat to airborne contaminants such as dust, oil or paint spray. Moreover, once the seat is installed, a number of workers (who may have soiled clothing or hands) must occupy the seat while performing final assembly and test operations and while transporting the vehicle from the factory to the automobile dealership. A temporary seat cover is important to insure that the seat reaches the customer in pristine condition. This increases customer satisfaction and avoids the necessity of subsequent cleaning operations.

Since temporary seat covers are generally disposed of after use, a key requirement for such seat covers is that they are inexpensive. This demands that the seat cover be made of a very low cost material, such as thin plastic sheeting. One drawback with such inexpensive materials is that they are slippery and inherently weak. Consequently, a major problem with conventional temporary seat covers is their tendency to slide on the seat as occupants enter and exit. This can result in the seat cover coming off, or tearing due to excessive forces exerted on the seat cover at weak points. While some prior seat covers have incorporated external straps or cords to secure the seat cover, in general, these solutions are prohibitively expensive or require too much time to install. In most manufacturing environments and in vehicle manufacturing in particular, fast and simple installation is a critical requirement.

Thus it is an object of the present invention to provide a temporary seat cover that has a low unit cost. It is a related object to provide a seat cover that is manufactured of inexpensive materials and utilizes inexpensive manufacturing processes while maintaining adequate strength.

It is another object of the present invention to provide a temporary seat cover that once secure to the seat, will not easily slide, shift or tear during use.

It is a further object of the present invention to provide a seat cover that is easily and quickly installed and secured to a seat and that does not require external securing means.

It is a further object of the present invention to

provide a method for quickly and securely applying a temporary seat cover to a seat.

SUMMARY OF THE INVENTION

According to the present invention, a temporary seat cover is provided for protecting a seat during manufacturing, shipping or repair operations. The seat cover generally comprises a two-layer flexible member with selected edges sealed together. On one side the seat cover is slit to form upper and lower pockets for enclosing a seat back and seat bottom respectively. In addition, a flap is cut from the flexible member in such a way that it remains connected to the flexible member at its base. An adhesive means is then attached to one side of the flap or to the seat cover back. Once the seat cover is installed on the seat the flap may be wrapped around a portion of the seat and adhered to the other side of and of the pockets to secure the seat cover to the seat. The resulting seat cover is inexpensive to manufacture in a single piece, is easily and quickly installed, and secures the seat cover in a way that minimizes slippage and tearing during use.

Other objects, features, and advantages of the present invention will become apparent from the subsequent description and the appended claims, taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a side view of an automotive seat with the temporary seat cover installed in accordance with present invention.

Figure 2 is a rear view of the automotive seat and seat cover shown in Figure 1.

Figure 3 is a plan view of a portion of a continuous roll of temporary seat covers manufactured in accordance with the present invention.

Figure 4 is a cross-sectional view of the roll of seat covers taken along line 4--4 in Figure 3.

Figure 5 is a cross-sectional view of the roll of seat covers taken along line 5--5 in Figure 3.

Figure 6 is a plan view of a portion of a continuous roll of temporary seat covers manufactured in accordance with an alternate embodiment of the present invention.

Figure 7 is a plan view of a portion of a continuous roll of temporary seat covers manufactured in accordance with an additional alternate embodiment of the present invention.

Figure 8 is a view of a seat cover in accordance with a further embodiment of the present invention for use with coupe-type seats.

Figure 9 is a side view of an automotive coupe-type seat with the seat cover shown in Figure 8

installed.

Figure 10 is a plan view of an alternate embodiment of a seat cover for use with coupe-type seats.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to Figure 1, an improved temporary seat cover 10 is shown. The seat cover 10 is installed on an automotive seat 12 which comprises an automotive bucket-type seat including a seat back 14 and a seat bottom 16. It will be appreciated that the seat cover 10 in accordance with the present invention can be used with a variety of seats, automotive and non-automotive. The seat cushion 10 includes an upper pocket 18 which substantially encloses the seat back 14 and a lower pocket 20 which encloses the seat bottom 16. Side Flaps 21 hang along the seats of the seat bottom 16 to provide further protection to the seat 12.

Attached to the seat cover 10 is an integral closure tab 22 which is wrapped around the sides of the seat back 14 near the junction of the seat back 14 and seat cushion 16. As better illustrated in Figure 2, a pair of closure tabs 22 are wrapped around both sides of the seat back 14 and attached to the rear of the upper pocket 18 by means of an adhesive 24 attached to the closure tabs 22 or upper pocket 18. In this way, the seat cover 10 is tightly constrained about the base of the seat back 14 to effectively prevent the seat cover 10 from sliding or slipping when sat upon.

A preferred production version of the seat cover 10 is illustrated in Figures 3-5. Figure 3 illustrates a continuous strip 26 of seat covers 10 which may be mounted on a roll (not shown). Figure 4 and 5 illustrate cross-sections of the continuous strip 26 showing that the seat covers 10 are manufactured in a generally tubular shape. It will be appreciated that the continuous strip 26 of seat covers 10 can be produced in the desired tubular shape by means of conventional plastic processing such as blown extrusion. Once the tubular strip 26 has been created, it is then slit along lines 28 and 30 to create upper pocket 18 and lower pocket 20.

Next, the desired shape for the seat cover 10 is created by cutting out and sealing U-shaped cut-outs 32 and 34 along lines 33 and 35. The sealing and cutting operation for the U-shaped cut-outs 32 and 34 may be accomplished using a conventional hot wire technique to achieve simultaneous cutting and sealing. Also, perforated lines 36 are created between adjacent covers 10 to facilitate separation of adjacent covers 10 from the strip 26 by hand tearing. The hot wire technique may also be employed to create the perforations 36.

Closure tabs 22 are created by cutting and sealing along lines 38. This will create a flap that forms the closure tab 22 once the covers 10 are separated at the perforation lines 36. To permit bonding of closure tab 22 to the upper pocket 18 during installation, an adhesive strip 24 is applied to each closure tab 22. The adhesive strip 24 may be applied in a number of ways. For instance, in the preferred embodiment they consist of sprayed on hot melt acrylic adhesive. A suitable hot melt acrylic adhesive such as HRJ-10848, is manufactured by Schenectady Chemicals of Schenectady, New York. The spray equipment is in registered placement for precise location of the pressure sensitive adhesive. To facilitate the adhesion of the hot melt acrylic adhesive spray, the area where the adhesive 24 is to be sprayed may first be treated with a process such as a corona discharge. This will help insure that the adhesive 24 will remain affixed in the proper location and will not stick instead to the back face of the adjacent cover when the strip 26 is rolled up. In this regard, it is important that areas which do not have adhesive applied are not treated with the corona process. For example, area 39 in Figure 4 in particular should be left untreated to prevent adhesive from an adjacent seat cover on the roll from sticking to this area. Also, it should be noted that where it is desired to apply printing to the seat cover corona treatment will likewise facilitate adhesion.

To increase the strength of the closure tabs 22, a pair of seal points 40 are placed near the base of each closure tab 22. It will be appreciated that without seal points 40 the bulk of the forces on the installed and bonded closure tabs 22 will be exerted on a single layer of the seat cover 10. That is, the layer on which the adhesive 24 is applied will receive the most stress. However, with seal points 40 in place, both layers of the seat cover 10 are bonded together near the base of the closure tabs 22. As a result, both layers, instead of a single layer of the seat cover 10 will be supporting forces on the closure tab 22. This reduces the likelihood that the tab or other areas of the seat cover 10 will tear when a person sits on the seat 12.

Referring now to Figures 6 & 7, alternative preferred embodiments of the seat cover shown in Figs 1-5 are shown. These embodiments differ in the positioning of the adhesive. In particular, in Figure 6 adhesive 41 is located on the rear surface of the upper pocket 18 instead of on the flaps 22. Placement of the adhesive 41 on the upper pocket 18 has the advantage of ensuring correct placement of the flaps 22 during assembly since the flaps 22 must be installed at the locations of the adhesive 41. In the embodiment shown in Figure 3 it is possible for the flaps 22 to be adhered to an improper location either before or during assembly.

A similar embodiment is shown in Figure 7, with the further modification of the adhesive 43 to extend substantially across the entire upper pocket 18. This embodiment, while having the advantages of the embodiment of Figure 6, also has the further advantage of permitting a wider range of adjustability of the placement of the flaps 22. In addition, greater adjustability permits a seat cover 50 of a given size to be used interchangeably on a wider range of seat sizes.

Referring now to Figures 8 & 9 another embodiment of the present invention adapted to be used with coupe type seats is shown. The coupe type seat 42 comprises a seat bottom 44 and seat back 46. In the typical coupe seat 42, the seat back 44 is mounted on a hinge mechanism (not shown) in such a way that it may be folded forward to permit access to a rear storage compartment. A key distinction with the coupe seat 42 is that a significant gap 48 exists between the base of the seat back 46 and the seat bottom 44. In general, the seat cover 50 in accordance with this embodiment of the present invention utilizes a flap 52 that is inserted into this gap 48 between the seat back 46 and the seat bottom 44. The flap 52 may then be pulled upward and bonded to the back of the seat cover 50. Thus, it will be appreciated that the seat cover 50 can be utilized with any seat in which there is sufficient gap 48 between the seat back 46 and the seat bottom 44 to permit flap 52 to be inserted therein.

Seat cover 50 includes an upper pocket 54 for enclosing the seat back 46 and a lower pocket 56 for enclosing the seat bottom 44. Seat cover 50 is manufactured in a manner similar to the seat cover 10 depicted in Figures 3-5. As best seen in Figure 8 the tubular seat cover 50 is slit along lines 58 and 60 to create the upper 54 and lower 56 pockets. Closure tab 52 is formed by cutting the top surface of the cushion 50 along line 62. An adhesive strip 64 is applied to the closure tab 52 in a manner similar to the adhesive strips 24 shown in Figures 1-5. That is, the adhesive is sprayed on with hot melt acrylic, and the area is first treated with a corona discharge process. As viewed in Figure 8, adhesive 64 is placed on the back side of flap 62 to permit attachment to the upper pocket 54 as shown in Figure 9. Seat cover 50 is separated from adjacent seat covers by tearing along a perforated strip 66. In addition, cut out portions 68 & 70 are created by cutting and sealing with a hot wire along lines 72 & 74 as discussed above. It should be noted that the closure tab 52 is made of a single layer of plastic where the previous closure tabs 22 were made of double layers. However, adequate strength is achieved by substantially increasing the width of closure tab 52 to distribute forces over a much larger area and thus insuring

adequate strength against tearing.

To install seat cover 50 the installer simply tears the next seat cover off the roll along perforated lines 66, and slips upper pocket 54 over the seat back 46 and the lower pocket 56 over the seat bottom 44. Next, the closure tab 52 is pushed through the gap 48 between the seat back 46 and bottom 44 and closure tab 52 is pulled upward to tighten seat cover 50 and bond the closure tab 52 to the back of the seat cover 50. As a result, the seat cover 50 may be quickly and easily installed. Also, the seat cover 50 will be securely attached to the seat 42 and will not be subject to shifting or tearing by seat occupant due to the location and design of the closure tab 52.

Referring now to Figure 10 there is shown another embodiment of the seat cover 50 wherein adhesive 76 is attached to the back side of upper pocket 54 instead of to the flap 62. As discussed above in connection with Figures 6 & 7, this ensures correct placement of the flap 62. Also, since flap 62 must be pushed through gap 48, this alternate placement of adhesive 76 shown in Fig 10 will prevent sticking of the flap 62 during this insertion procedure. When applied to the seat 42, the seat cover shown in Figure 10 will appear substantially like the one shown in Figure 9 with the substitution of adhesive 76 for adhesive 64.

Thus, there is disclosed in the above description and in the drawings, several illustrative embodiments of the invention which fully and effectively accomplish the objects thereof. However, it will be apparent that variations in the details of the apparatus may be indulged in without departing from the sphere of the invention herein described, or the scope of the appended claims.

Claims

1. A temporary seat cover comprising:
 - a two-layer flexible member having an upper pocket for enclosing a seat back therein, and a lower pocket for enclosing a seat bottom cushion therein;
 - a flap connected to said flexible member at its base;
 - and an adhesive means attached near the distal end of said flap, wherein said flap is adapted to be wrapped around a portion of said seat and adhered to the other side of said pocket covering said seat portion to secure said seat cover to said seat.
2. The seat cover of Claim 1, wherein said flap is made of both layers of said two-layer flexible member and has its edges sealed together.
3. The seat cover of Claim 2, further comprising

- seal points wherein said two layers of said flexible member are fused together, said seal points being located near the base of said flap, whereby forces pulling on said flap are resisted by both layers of said flexible member at said seal points.
4. The seat cover of Claim 1, wherein said flap is centrally located on a top layer of said flexible member near the junction of said seat back and bottom, and said flap passes between said seat back and bottom to adhere to a bottom layer of said flexible member.
 5. The seat cover of Claim 1, wherein said flap is located near one edge of said flexible member and said flap is wrapped around the side of said seat to adhere to a bottom layer of said flexible member.
 6. The seat cover of Claim 5, further comprising a second flap substantially identical to said flap but located on an opposite side of said flexible member and wrapped around an opposite side of said seat.
 7. The seat cover of Claim 6 wherein said flaps are generally rectangular in shape.
 8. The seat cover of Claim 1, wherein said two-layer flexible member is formed on a continuous sheet and said seat cover is separated from adjacent seat covers on said continuous sheet by means of a perforated edge.
 9. The seat cover of Claim 1, wherein said two-layer flexible member is manufactured in an extruded tubular form.
 10. The seat cover of Claim 1, wherein said adhesive is applied to said flap by spraying.
 11. The seat cover of Claim 10 wherein said adhesive is a hot melt acrylic.
 12. The seat cover of Claim 10 wherein said seat flap is treated with a corona discharge process before said adhesive is applied.
 13. A method for producing temporary seat covers comprising the steps of:
 - molding a continuous plastic tubular member;
 - perforating said tubular member in a lateral direction at regular intervals to facilitate separating each seat cover;
 - slitting said tubular member along two parallel longitudinal lines to create upper and lower pockets;
 - cutting and sealing cutouts in said upper and lower pockets in a predetermined shape;
 - cutting and sealing a flap in said tubular member; and
 - applying an adhesive on one side of said flap.
 14. The method of Claim 13 further comprising the step of sealing a strip of said tubular member near the point of attachment of said flap, so that two layers of said tubular member are sealed together at said sealed strip.
 15. The method of Claim 13 further comprising the steps of cutting and sealing a second flap, and applying an adhesive to said second flap.
 16. The method of Claim 13 wherein said step of molding a continuous tubular member further comprises the step of blow molding said tubular member.
 17. The method of Claim 13 wherein said step of applying an adhesive further comprises the step of spraying an adhesive on said flap.
 18. A temporary seat cover comprising:
 - a two-layer flexible member having an upper pocket for enclosing a seat back therein, and a lower pocket for enclosing a seat bottom cushion therein;
 - a flap connected to said flexible member at its base; and
 - an adhesive means attached to one side of said upper pocket wherein said flap is adapted to be wrapped around a portion of said seat and adhered to said one side of said upper pocket to secure said seat cover to said seat.
 19. The seat cover of Claim 18 wherein said adhesive means comprises a pair of adhesive strips.
 20. The seat cover of Claim 18 wherein said adhesive is applied to said upper pocket by spraying.
 21. The seat cover of Claim 20 wherein said upper pocket is treated with a corona discharge process before said adhesive is applied.
 22. A method for producing temporary seat covers comprising the steps of:
 - molding a continuous plastic tubular member;
 - perforating said tubular member in a lateral direction at regular intervals to facilitate

separating each seat cover;

slitting said tubular member along two parallel longitudinal lines to create upper and lower pockets;

cutting and sealing cutouts in said upper and lower pockets in a predetermined shape;

cutting and sealing a flap in said tubular member; and

applying an adhesive to said upper pocket.

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23. The method of Claim 13 further comprising the step of sealing a strip of said tubular member near the point of attachment of said flap, so that two layers of said tubular member are sealed together at said sealed strip.

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24. A temporary seat cover comprising:

a two-layer flexible member having an upper pocket for enclosing a seat back therein, and a lower pocket for enclosing a seat bottom cushion therein;

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a flap connected to said flexible member at its base; and

an adhesive means for attaching said flap to said upper pocket, wherein said flap is adapted to be wrapped around a portion of said seat and adhered to the other side of said pocket covering said seat portion to secure said seat cover to said seat.

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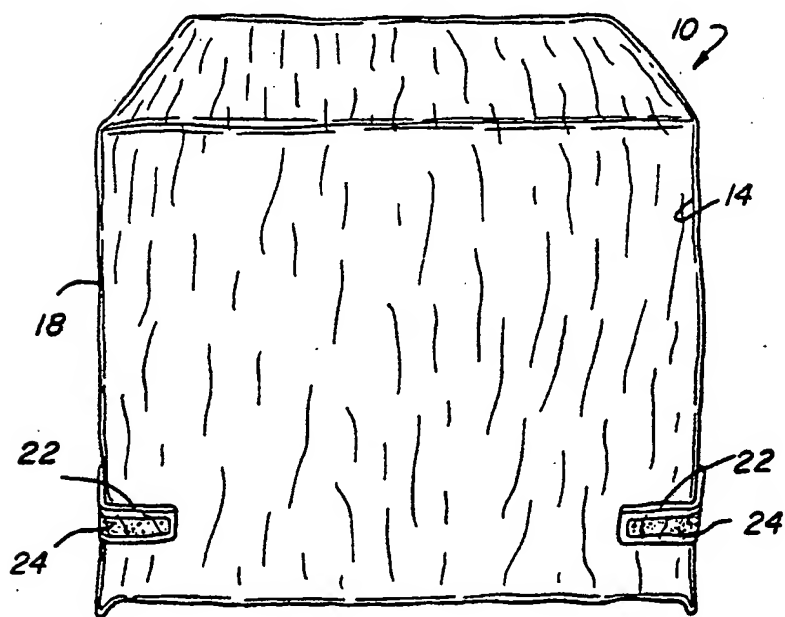
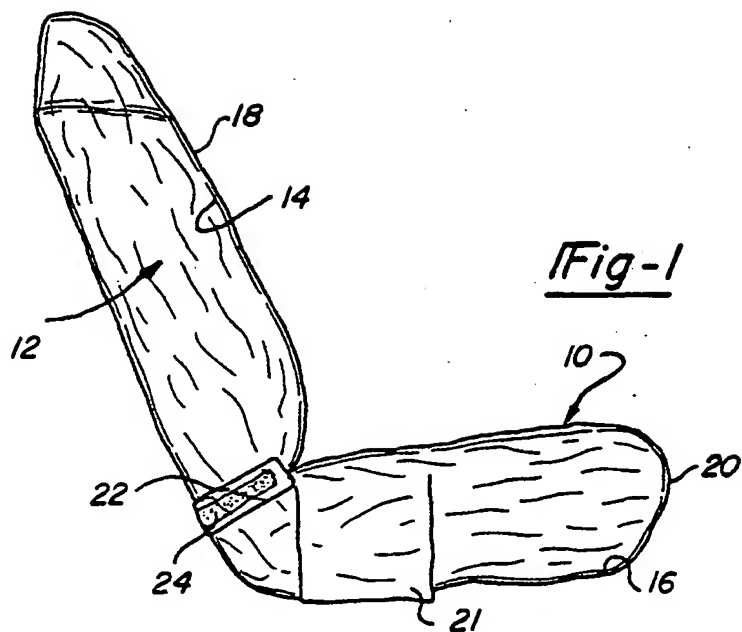
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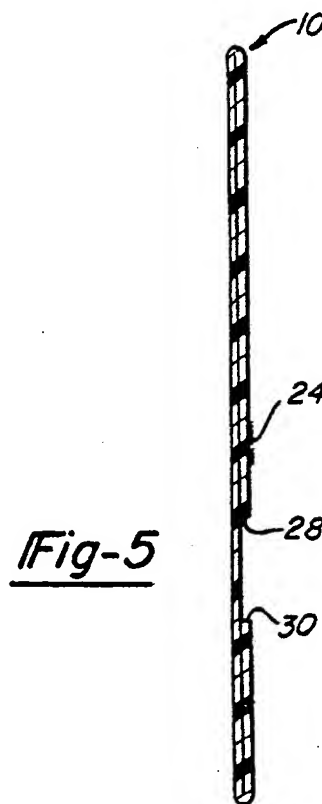
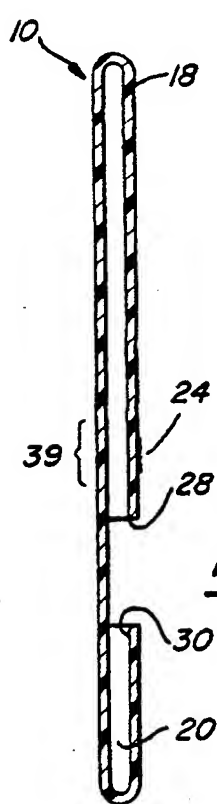
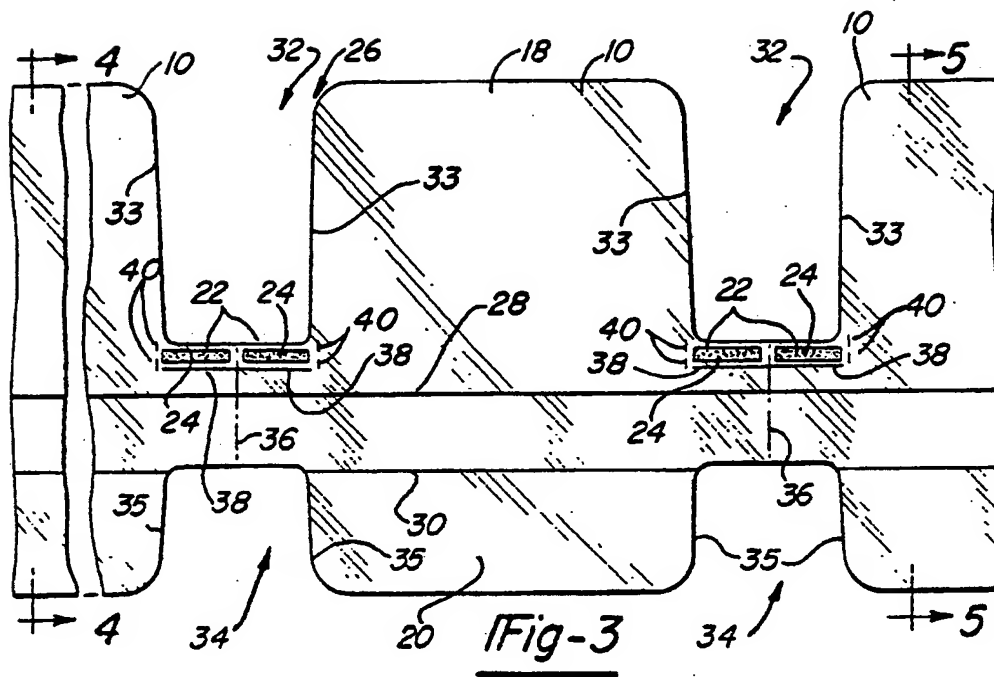
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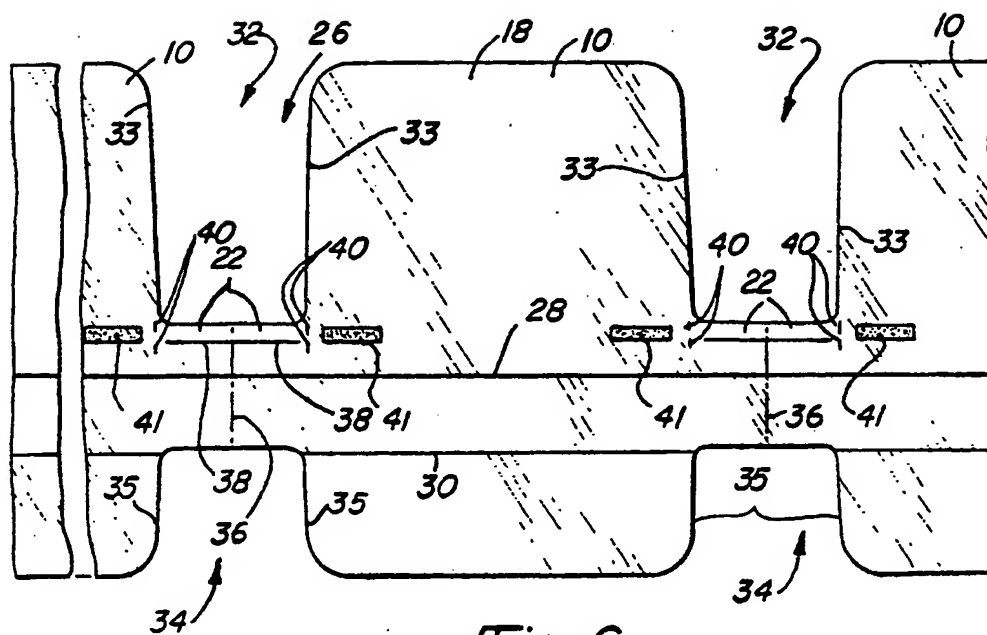


Fig-6

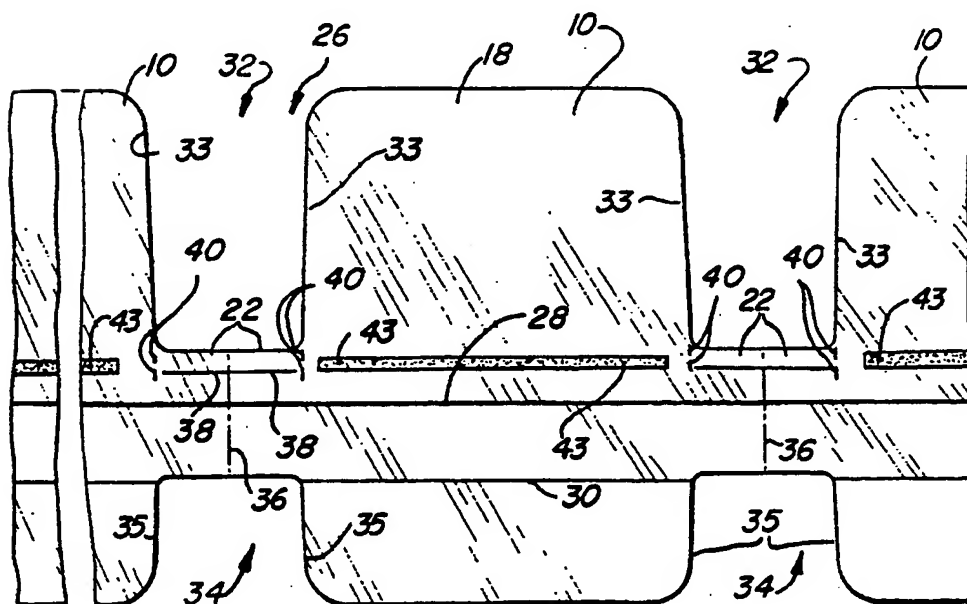


Fig-7

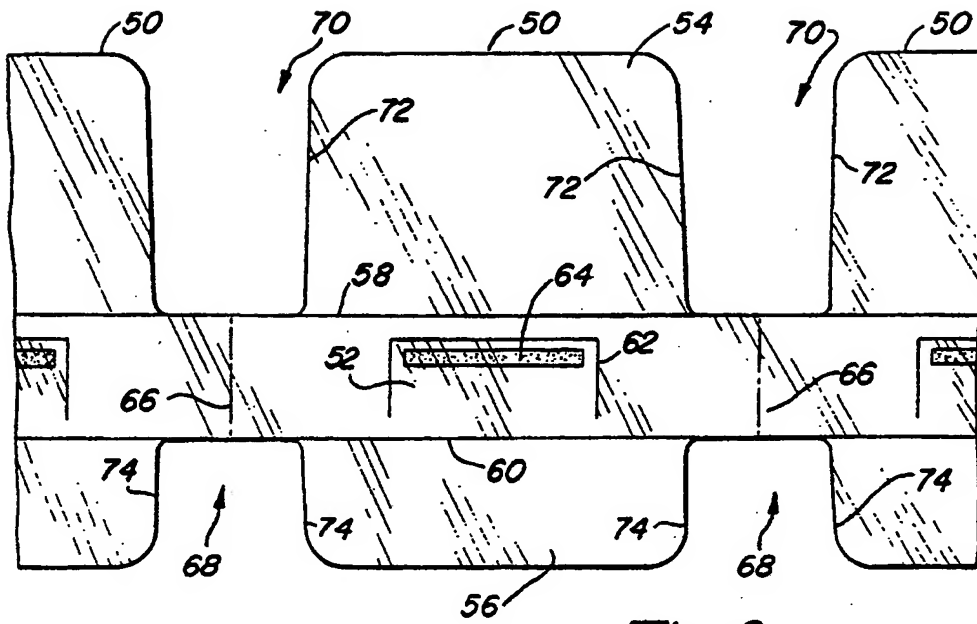


Fig-8

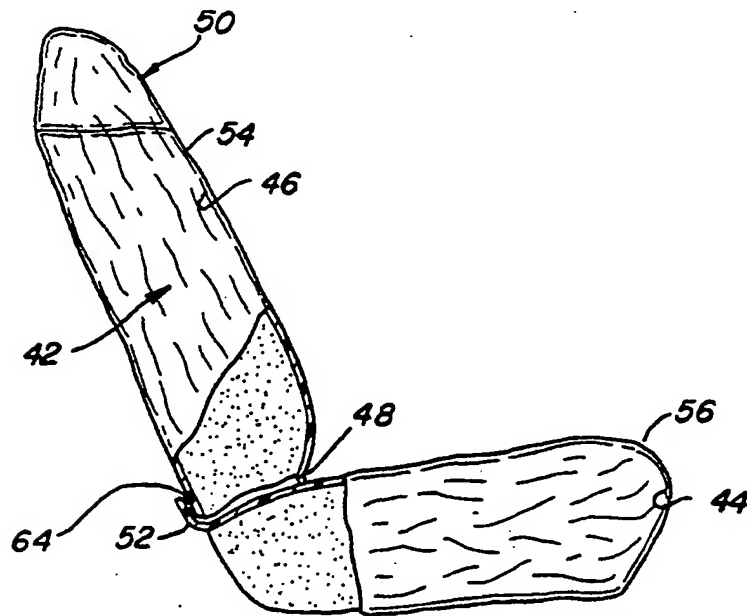


Fig-9

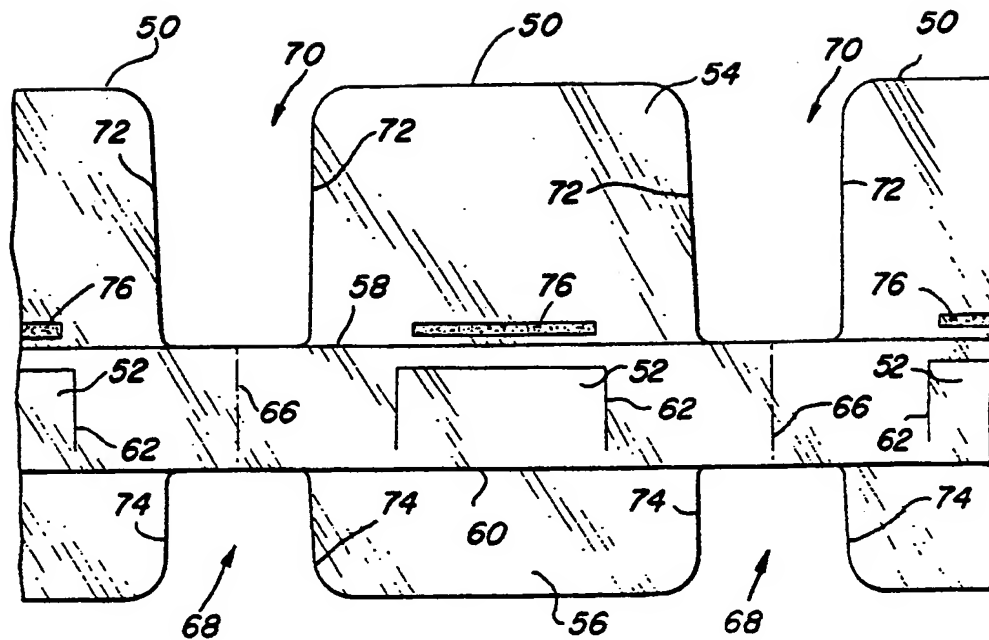


Fig-10



European
Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 90 31 4018

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	US-A-3 695 692 (CADILLAC PRODUCTS) * column 2, line 59 - column 3, line 31; figures 1-3 *	1,8,9,13, 16,18,22, 24	A 47 C 31/10
A	FR-A-2 409 727 (R. W. NISSEN LTD.) * page 3, line 35 - page 6, line 29; figures 1-5 *	1,8,9,13	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			A 47 C B 08 B
The present search report has been drawn up for all claims			
Place of search		Date of completion of search	Examiner
The Hague		02 August 91	MYSLIWETZ W.P.
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document			